



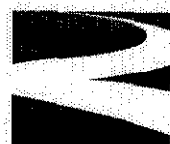
CALFED
BAY-DELTA
PROGRAM

Water Quality Program Plan

Draft Programmatic EIS/EIR Technical Appendix
June 1999

Water Quality Program Plan

June 1999



CALFED
BAY-DELTA
PROGRAM

CONTENTS

What's New in this Draft	vii
Acknowledgments	viii
Glossary	ix
Abbreviations	xii
1. INTRODUCTION	1-1
1.1 PURPOSE AND NEED	1-3
1.2 VISION	1-5
1.3 GEOGRAPHIC SCOPE	1-7
1.4 WATER QUALITY PROGRAM ACTIONS	1-9
1.4.1 Introduction	1-9
1.4.2 Background	1-9
1.5 PRE-FEASIBILITY ANALYSIS	1-11
1.6 ORGANIZATION OF THIS REPORT	1-12
2. LOW DISSOLVED OXYGEN CONCENTRATION AND OXYGEN-DEPLETING SUBSTANCES	2-1
2.1 SUMMARY	2-1
2.2 PROBLEM STATEMENT	2-1
2.3 OBJECTIVE	2-2
2.4 DELTA WATERWAYS	2-2
2.4.1 Problem Description	2-2
2.4.2 Approach to Solution	2-6
2.5 EAST SIDE DELTA TRIBUTARIES	2-9
2.5.1 Problem Description	2-9
2.5.2 Approach to Solution	2-9
2.6 LOWER SACRAMENTO RIVER TRIBUTARIES	2-10
2.6.1 Problem Description	2-10
2.6.2 Approach to Solution	2-10
2.7 SAN JOAQUIN RIVER REGION	2-10
2.7.1 Problem Description	2-10
2.7.2 Approach to Solution	2-11
2.8 SUISUN MARSH WETLANDS	2-11
2.8.1 Problem Description	2-11
2.8.2 Approach to Solution	2-12

3.	DRINKING WATER	3-1
3.1	SUMMARY	3-1
3.2	DRINKING WATER FOCUS OF THE WATER QUALITY PROGRAM	3-3
3.3	PROBLEM STATEMENT	3-3
3.4	OBJECTIVE	3-4
3.5	PROBLEM DESCRIPTION	3-4
3.5.1	Pathogens	3-5
3.5.2	Disinfection By-Products	3-6
3.5.3	Treatment Control of Disinfection By-Products	3-7
3.5.4	Source Control of Disinfection By-Products	3-8
3.5.5	Total Dissolved Solids, Salinity, Turbidity, and Nutrients	3-8
3.6	APPROACH TO SOLUTION	3-10
3.6.1	Bay-Delta Region	3-12
3.6.2	Sacramento and American Rivers	3-18
3.6.3	North Bay Aqueduct	3-21
3.6.4	South Bay Aqueduct	3-23
3.6.5	Clifton Court Forebay and Bethany Reservoir	3-25
3.6.6	Contra Costa Water District Intakes	3-26
3.6.7	Delta-Mendota Canal at the City of Tracy Intake	3-27
3.6.8	San Joaquin River	3-28
3.6.9	California Aqueduct	3-29
3.6.10	Castaic Lake and Lake Silverwood	3-30
3.7	CAPACITY FOR REDUCING BROMIDE AND ORGANIC CARBON THROUGH WATER QUALITY PROGRAM ACTIONS	3-32
3.7.1	Bromide	3-33
3.7.2	Organic Carbon	3-43
3.7.3	Conclusions	3-46
3.7.4	Recommendations	3-47
4.	MERCURY	4-1
4.1	Summary	4-1
4.2	Problem Statement	4-2
4.3	Objective	4-2
4.4	Problem Description	4-3
4.4.1	Sources and Transport of Mercury	4-4
4.4.2	Transformation and Bioavailability of Mercury	4-7
4.5	APPROACH TO SOLUTION	4-9
4.5.1	Priority Actions	4-9
4.5.2	Information Needed	4-13
4.5.3	Existing Activities	4-18

5. PESTICIDES	5-1
5.1 Summary	5-1
5.2 Problem Statement	5-1
5.3 Objective	5-2
5.4 Problem Description	5-2
5.4.1 Diazinon and Chlorpyrifos	5-2
5.4.2 Extent of Impairment	5-3
5.4.3 Predominant Uses of Diazinon and Chlorpyrifos	5-5
5.5 APPROACH TO SOLUTION	5-6
5.5.1 Priority Actions	5-6
5.5.2 Information Needed	5-9
5.5.3 Existing Activities	5-10
6. ORGANOCHLORINE PESTICIDES	6-1
6.1 SUMMARY	6-1
6.2 OBJECTIVE	6-1
6.3 PROBLEM DESCRIPTION	6-2
6.4 APPROACH TO SOLUTIONS	6-4
6.4.1 Priority Actions	6-4
6.4.2 Information Needed	6-7
6.4.3 Existing Activities	6-8
7. SALINITY	7-1
7.1 SUMMARY	7-1
7.2 PROBLEM STATEMENT	7-2
7.3 OBJECTIVE	7-4
7.4 PROBLEM DESCRIPTION	7-5
7.4.1 Lower San Joaquin River Basin Salt Balance	7-5
7.4.2 Local Actions	7-6
7.4.3 Sources	7-6
7.4.4 Impacts	7-7
7.5 APPROACH TO SOLUTIONS	7-8
7.5.1 Local Actions	7-8
7.5.2 Basinwide Actions	7-15
7.5.3 Evaluation of Other Sources of Salinity	7-23
8. SELENIUM	8-1
8.1 SUMMARY	8-1
8.2 PROBLEM STATEMENT	8-1
8.2.1 Current Regulatory Status	8-2
8.2.2 Data Gaps	8-3
8.3 OBJECTIVE	8-3

8.4	PROBLEM DESCRIPTION	8-4
8.4.1	Sources	8-4
8.4.2	Biological Effects of Selenium	8-4
8.4.3	Selenium Risk Guidelines	8-6
8.4.4	Selenium Levels in the Bay-Delta	8-7
8.5	APPROACH TO SOLUTION	8-8
8.5.1	Agricultural Sources	8-8
8.5.2	Refineries	8-16
9.	TRACE METALS	9-1
9.1	SUMMARY	9-1
9.2	PROBLEM STATEMENT	9-1
9.3	OBJECTIVE	9-1
9.4	PROBLEM DESCRIPTION	9-2
9.4.1	Water Concentrations	9-2
9.4.2	Biological Effects	9-5
9.5	APPROACH TO SOLUTION	9-6
9.5.1	Priority Actions	9-6
9.5.2	Information Needed	9-7
9.5.3	Existing Activities	9-7
10.	TURBIDITY AND SEDIMENTATION	10-1
10.1	SUMMARY	10-1
10.2	PROBLEM STATEMENT	10-1
10.3	OBJECTIVE	10-1
10.4	PROBLEM DESCRIPTION	10-2
10.4.1	Delta Region	10-2
10.4.2	Bay Region	10-2
10.4.3	Sacramento River Region	10-3
10.4.4	San Joaquin River Region	10-4
10.5	APPROACH TO SOLUTION	10-5
10.5.1	Priority Actions	10-5
10.5.2	Information Needed	10-8
11.	TOXICITY OF UNKNOWN ORIGIN	11-1
11.1	SUMMARY	11-1
11.2	PROBLEM STATEMENT	11-1
11.3	OBJECTIVE	11-1
11.4	PROBLEM DESCRIPTION	11-2
11.4.1	Background	11-2
11.4.2	Toxicity Found	11-2
11.4.3	Known Data Gaps	11-3

11.5	APPROACH TO SOLUTION	11-4
11.5.1	Priority Actions	11-4
11.5.2	Information Needed	11-6
11.5.3	Existing Activities	11-7
12.	IMPLEMENTATION STRATEGY	12-1
12.1	INTRODUCTION	12-1
12.2	GOAL	12-3
12.3	PRINCIPLES	12-3
12.4	EARLY IMPLEMENTATION ACTIONS	12-4
12.5	STAGE I ACTIONS	12-4
12.6	LINKAGES	12-4
12.7	MANAGEMENT AND GOVERNANCE	12-6
12.7.1	Water Quality Program	12-8
12.7.2	CALFED Policy Group	12-9
12.7.3	Water Quality Policy Team	12-9
12.7.4	Bay-Delta Advisory Council (FACA Group)	12-10
12.7.5	Delta Drinking Water Council (FACA Group)	12-10
12.7.6	Ecosystem Water Quality Council (or Modified Ecosystem Roundtable FACA Group)	12-10
12.7.7	Water Quality Technical Group	12-12
12.7.8	Expert Panels	12-14
12.7.9	Implementing Agencies	12-15
12.8	FINANCE STRATEGY	12-15
12.9	ADAPTIVE MANAGEMENT STRATEGY	12-16

APPENDICES

Appendix A.	Water Quality Technical Group Members	A-1
Appendix B.	Water Bodies Listed as Impaired under Clean Water Act Section 303(d)	B-1
Appendix C.	Potential Tools and Indicators of Success	C-1
Appendix D.	Water Quality Targets for Parameters of Concern	D-1
Appendix E.	Bay-Delta Drinking Water Quality: Bromide Ion (Br ⁻) and Formation of Brominated Disinfection By-Products	E-1
Appendix F.	Responses to Comments on the March 1998 Draft of the Water Quality Program Plan, Technical Appendix to the EIR/EIS	F-1

TABLES

1.	Water Quality Parameters of Concern to Beneficial Uses	1-10
2.	Summary of Water Quality Program Actions by Region	1-11
3.	Early Implementation Actions	12-17
4.	Stage One Actions	12-19

FIGURES

1.	The Three Phases of the CALFED Bay-Delta Program	1-2
2.	The Three Phases of the Water Quality Program and Associated Program Documents	1-4
3.	Water Quality Program Plan Geographic Scope	1-8
4.	Bromide at Contra Costa Intake	3-34
5.	Bromide at Clifton Court	3-35
6.	Vicinity Map - South Delta	3-37
7.	Bromide Loadings at the Delta-Mendota Canal and the San Joaquin River at Vernalis	3-39
8.	Vicinity Map - San Luis Reservoir Area	3-41
9.	Bromide Concentrations in the San Luis Reservoir Area	3-42
10.	Possible Contribution of Bromide at Harvey O. Banks from Several Sources	3-44
11.	Organic Carbon at Selected Delta Locations	3-45
12.	San Joaquin River near Vernalis 30-Day Running Average Electrical Conductivity ..	7-4
13.	Comparison of Sacramento River and San Joaquin River Water Quality	7-4
14.	CALFED Water Quality Program Interim Governing Structure	12-7
15.	Water Quality Improvement Strategy	12-11
16.	Water Quality Program Mercury Strategy	12-13
17.	CMARP Adaptive Management Process	12-16

WHAT'S NEW IN THIS DRAFT

Since publication of the March 1998 CALFED Bay-Delta Program (Program) Draft Programmatic Environmental Impact Statement/Environmental Impact Report, additional effort has been devoted to further development of the Water Quality Program. Attention has been focused mainly on these areas:

- Further defining water quality problems for CALFED action.
- Developing more detailed plans for water quality actions.
- Prioritizing water quality actions for early implementation.
- Recommending monitoring, assessment, and research activities needed to enable detailed project planning, develop final priorities for implementation, and evaluate the success of implementing water quality actions.

This work has been accomplished through six working teams drawn from the Water Quality Technical Group, the body of agency and stakeholder representatives who provide water quality expertise and assistance in developing the Water Quality Program.

ACKNOWLEDGMENTS

CALFED staff appreciate the participation and contribution of all the stakeholders involved with the Water Quality Program. We extend a special thanks to the Water Quality Technical Group and all of the work teams members who labored long and hard to assemble the individual program action sections of this document. Appendix A contains a complete list of members of the Water Quality Technical Group.

Members of the individual work groups are:

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* Team Leaders

GLOSSARY

Following are working definitions of terms found throughout the Water Quality Program Plan (WQPP). This section is intended to facilitate the reader's understanding of the CALFED Water Quality Program and applies only to the WQPP. It is not intended as a general scientific glossary of terms.

Adaptive Management - A process of modifying methods of meeting objectives through interactive decision making, and adapting future management actions according to what is learned from prior projects and studies.

Anthropogenic - Caused by human intervention or originating from human activities.

Bay Region - The Bay Region includes Suisun Bay and Marsh, San Pablo Bay, and the San Francisco Bay watershed. In addition, a zone of approximately 25 miles offshore from Point Conception to the Oregon border has been included to cover potential ocean harvest management of anadromous fish along the California coast. Certainly anadromous fish roam beyond the artificial boundary, but the purpose of the boundary is to identify the area where most anadromous fish from the Bay-Delta system occur and include the area where harvest management actions would be employed.

Beneficial Use - Refers to water uses that are included in the Water Quality Program. Specifically, these water uses are urban, agricultural, industrial, environmental, and recreational beneficial uses.

Ceriodaphnia - A fresh water cladoceran, commonly known as a water flea, which is used as a test species in toxicity bioassays.

Comprehensive Monitoring, Assessment, and Research Program (CMARP) - A program currently under development by the CALFED Bay-Delta Program to identify the monitoring, assessment, and research needed for CALFED-related projects, actions, and activities. CMARP is a critical component of the CALFED adaptive management strategy.

Delta Region - The Delta Region is defined as the statutory Delta (described in Section 12220 of the California Water Code) and is comprised roughly of lowlands (lands approximately at or below the 5-foot contour) and uplands (lands above the 5-foot contour that are served water by lowland Delta channels). The Delta Region has been carved out of the Sacramento and San Joaquin River watersheds because of the Program's focus on this region.

Disinfection By-Products - Chemical compounds that are created during the disinfection of drinking water. Some compounds may be toxic, carcinogenic, or teratogenic.

Indicators of Success - Indicators are a means of assessing progress toward endpoints or targets that are representative of when beneficial uses are no longer impaired.

Parameter Assessment Team (PAT) - A technical working sub-group of the Water Quality Technical Group representing a variety of interests. See Appendix A and the Acknowledgments for a listing of PAT members.

Parameters of Concern - Substances identified by the Water Quality Program as causing, or potentially causing, water quality problems to beneficial water uses based on the input of technical experts and stakeholders. Substances may be added to or deleted from the Water Quality Program parameters of concern based on new knowledge. Once a substance becomes a parameter of concern, water quality targets are established for the parameter and actions are developed to address the water quality problems associated with the parameter.

Performance Measures - A means to gauge the progress of an action. Progress may be judged based on a variety of factors, such as reduced concentrations of a parameter. Performance measures answer the question, "Is water quality improving?"

Sacramento River Region - The Sacramento River Region is essentially bounded by the ridge tops of the Sacramento River watershed or hydrologic region. The Goose Lake watershed, in the northeast corner of California, has been left out of the study area because it rarely contributes to the flow of the Pit and Sacramento Rivers—apparently Goose Lake last spilled very briefly sometime in the 1950s and only a few times between 1869 and the present—and no actions are proposed in the watershed. Although the Trinity River is connected by a pipeline to the Sacramento River system, the Trinity River does not flow naturally into the Sacramento River watershed, and no CALFED water quality actions are proposed for the Trinity River or its watershed.

San Joaquin River Region - The San Joaquin River Region includes both the San Joaquin and Tulare Lake hydrologic basins. The Tulare Lake basin only intermittently spills over into the San Joaquin River basin during wet years or a series of wet years. However, potentially significant water quality management issues are linked to the San Joaquin River watershed and ultimately, the Bay-Delta system.

Other SWP and CVP Service Areas - The Other SWP and CVP Service Areas include small portions of Santa Cruz, San Benito, and Santa Clara Counties outside the Bay watershed, served by the CVP (San Felipe Division). The SWP service areas include most of the urbanized areas of southern California, as well as Santa Barbara, San Luis Obispo, Alameda and Santa Clara Counties. The CVP and SWP service areas within the Central Valley are covered by Central Valley watersheds. In addition, Imperial Irrigation District is included in this region because the significant water use efficiency and transfer potential in the district could help to reduce the water supply and demand mismatch in southern California urban areas.

Targets or Water Quality Objectives - End points or compliance levels that when met indicate that beneficial uses are protected. These endpoints may be based on achievement of a variety of measurable factors, including numerical and narrative objectives for water, sediment, and tissue and lack of toxicity as indicated by toxicity testing. Indicators of success answer the question, "Have water quality goals been achieved?"

Toxicity of Unknown Origin - Refers to toxicity to native or laboratory test organisms due to unknown sources.

Water Quality Action - A programmatic action developed by the CALFED Water Quality Program to address impairments to agriculture, environment, drinking water, industrial, and recreational beneficial uses.

Water Quality Target - A numeric or narrative water, sediment, or tissue value associated with a parameter of concern. Water quality targets are based on existing water quality, sediment, and tissue objectives recognized by the scientific community and regulatory authorities. In general, targets have been established to represent a threshold below which beneficial uses of water are not impaired. The target represents the goal toward which the Water Quality Program will strive; realizing targets may not be possible to reach in all cases.

Water Quality Technical Group (WQTG) - A group of over 200 technical experts, agency representatives, and stakeholders representing the environment, agriculture, drinking water, industry, and recreation who participate in the development of the Water Quality Program. See Appendix A for a listing of WQTG members.

ABBREVIATIONS

BCPOS	biorational cling peach orchard systems
BIOS	biologically integrated orchard systems
BIPS	biologically integrated prune systems
BLM	U.S. Bureau of Land Management
BMPs	best management practices
BOD	biochemical oxygen demand
CALFED	CALFED Bay-Delta Program
CCC	California Coastal Commission
CCWD	Contra Costa Water District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (federal Superfund - EPA)
cfs	cubic foot per second
CMARP	Comprehensive Monitoring, Assessment, and Research Plan
COD	chemical oxygen demand
Corps	U.S. Army Corps of Engineers
CUWA	California Urban Water Agencies
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act (Reclamation)
CVRWQCB	Central Valley Regional Water Quality Control Board No. 5
CWA	Clean Water Act (federal)

DBPs	disinfection by-products
DDT	dichloro diphenyl trichloroethane [also DDE;dichloro diphenyl dichloroethylene, and DDD; 1,1-dichloro-2,2bis(p-chlorophenyl)ethane]
DFG	California Department of Fish and Game
DHS	California Department of Health Services
DMC	Delta-Mendota Canal (CVP aqueduct)
DPR	California Department of Pesticide Regulation
DWR	California Department of Water Resources
DWRDSM	California Department of Water Resources Delta Simulation Model
EC	electrical conductivity (also known as “specific conductance”)
EPA	U.S. Environmental Protection Agency
EQIP	Environmental Quality Incentives Program (USDA)
ESA	Endangered Species Act (Federal)
FDA	U.S. Food and Drug Administration
GAC	granular-activated carbon
GIS	Geographic Information System
IEP	Interagency Ecological Program
ISDP	Interim South Delta Program (DWR)
ISDP DEIR/EIS	ISDP Draft Environmental Impact Report/Environmental Impact Statement (DWR)
Kg	kilogram
LBNL	Lawrence Berkeley National Laboratories
MAA	management agency agreement (between DPR and SWRCB)

$\mu\text{g/g}$	micrograms per gram
mg/kg	milligrams per kilogram
$\mu\text{g/l}$	micrograms per liter
μm	micrometer
MIB	methyisoborneol (taste- and odor-causing compound)
MP	management practices (a non-regulatory form of BMPs)
MCL	maximum contaminant level
MOU	memorandum of understanding
MTBE	methyl tert-butyl ether (fuel oxygenate causing water quality contamination)
MWD	Metropolitan Water District of Southern California
MWQI	Municipal Water Quality Investigation (a DWR program)
NAWQA	National Water Quality Assessment (a USGS program)
NAS/NAE	National Academy of Science/National Academy of Engineers
NBA	North Bay Aqueduct (SWP aqueduct)
ng	nanogram
ng/g	nanograms per gram
NPDES	National Pollutant Discharge Elimination System (federal Clean Water Act)
NPL	National Priorities List (EPA)
NRCS	Natural Resources Conservation Service
OC	organochlorine (pesticides made of chlorinated organic compounds, such as DDT)
OEHHA	Office of Environmental Health Hazard Assessment (Cal EPA)
PAM	polyacrylamide

PAT	Parameter Assessment Team
PCA	pest control advisor
PCBs	polychlorinated biphenyls
PEIS/EIR	Programmatic Environmental Impact Statement/Environmental Impact Report (CALFED)
pH	acidity of water, log scale of 1 to 14, the lower number being the stronger acid.
ppb	parts per billion
ppm	parts per million
PLAN	West Stanislaus Sediment Reduction Plan
Program	CALFED Bay-Delta Program
Rainbow Report	“A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley” (SJVDP)
RCD	Resource Conservation District
Reclamation	U.S. Bureau of Reclamation
RMP	Regional Monitoring Program (San Francisco Estuary Institute)
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board (there are nine, responsible to the SWRCB)
RWCF	Stockton Regional Wastewater Control Facility
SAR	sodium adsorption ratio
SBA	South Bay Aqueduct (SWP aqueduct)
SCVWD	Santa Clara Valley Water District
SCWA	Solano County Water Agency

Se/g	selenium per gram
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board No. 2
SJRMP-WQS	San Joaquin River Management Program, Water Quality Subcommittee
SJVDP	San Joaquin Valley Drainage Program
SJVDIP	San Joaquin Valley Drainage Implementation Program (successor to SJVDP)
SSAC	Sanitary Survey Action Committee (SWP contractors)
Superfund	See CERCLA
SWRCB	State Water Resources Control Board
SWTR	Surface Water Treatment Rule
SWP	State Water Project
T&O	taste and odor (an objectionable characteristic of drinking water)
TDS	total dissolved solids
TIE	toxicity identification evaluation
TMDL	total maximum daily load
TOC	total organic carbon
TSMP	Toxic Substances Monitoring Program (an SWRCB/DFG program)
TTHMs	total trihalomethanes
UC	University of California
UCIPM	University of California Statewide Integrated Pest Management Project
UPC	Urban Pesticide Committee
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service

USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDR	Waste Discharge Requirement
WQCP	Water Quality Control Plan for the Sacramento-San Joaquin Delta (SWRCB)
WQPP	Water Quality Program Plan (CALFED)
WQTG	Water Quality Technical Group (agency and stakeholder advisors to the CALFED Water Quality Program)
WWD	Westlands Water District